Abstract

A method for thermally working a workpiece, thermal working machine therefor, and cutting or welding tool suited for use in the working machine

In a known thermal working machine for working a workpiece, a thermal working tool (1) is provided that is movable along the workpiece surface (7) and comprises a torch head (2) which has exchangeably mounted thereon cutting or welding tools (3; 4; 5) extending between the torch head (2) and the workpiece surface (7). A distance control for setting a predetermined working distance (A) between the working tool (1) and the workpiece surface (7) is carried out by means of a magnetic system, an alternating magnetic field being produced in a sensor body with ferromagnetic properties above the workpiece surface (7). Starting from this, in order to permit a local measurement of even large working distances, the invention suggests that the torch head (2) and at least one of the cutting or welding tools (3; 4; 5) should contain ferromagnetic material and form at least part of the sensor body (2; 3; 4; 5). The method for controlling the working distance is characterized in that the magnetic field produced is sensed by means of two measuring coils, the phase position of the measurement signals is evaluated, and a phase shift determined in this way is used for controlling the working distance (A).